Wireless Network Card Series

User's Guide

Version 2.1

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IMPORTANT NOTE:
FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

SparkLAN declares that WL-611GS/WL-660GS (FCC ID: MXF-C940720G/MXF-C940531G) is limited in CH1~CH11 for 2.4 GHz by specified firmware controlled in U.S.A.

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1. Introduction

Thank you for purchasing your Wireless LAN Adapter. This User' s Guide will assist you with the installation procedure.

The package you have received should contain the following items:

- Wireless LAN Adapter
- Quick Installation Guide
- CD containing Wireless network adapter utility & drivers and User's Guide
  Note: if anything is missing, please contact your vendor

Note: This manual is valid for all Wireless LAN adapters, such as PC Card, USB, mini-USB, PCI adapter, mini-PCI…etc.

2. Wireless LAN Basics

Wireless LAN (Local Area Networks) systems offer a great number of advantages over a traditional, wired system. Wireless LANs (WLANs) are more flexible, easier to setup and manage and often more cost effective than their wired equivalence.

Using radio frequency (RF) technology, WLANs transmit and receive data over the air, minimizing the need for wired connections. Thus, WLANs combine data connectivity with user mobility, and, through simplified configuration, enable movable LANs.

With wireless LANs, users can access shared information without looking for a place to plug in and network managers can set up or augment networks without installing or moving wires. Wireless LANs offer the following productivity, convenience and cost advantages over traditional wired networks:

- Mobility - Wireless LAN systems can provide LAN users with access to real-time information anywhere in their organization. This mobility supports productivity and service opportunities not possible with wired networks.

- Installation Speed and Simplicity - Installing a wireless LAN system can be fast and easy and can eliminate the need to pull cable through walls and ceilings.

- Installation Flexibility - Wireless technology allows the network to go where wires cannot go.

- Reduced Cost-of-Ownership - While the initial investment required for wireless LAN hardware might be higher than the cost of wired LAN hardware, overall installation expenses and life-cycle costs will be significantly lower. Long-term cost benefits are greatest in dynamic environments requiring frequent moves, adds, and changes.

- Scalability - Wireless LAN systems can be configured in a variety of topologies to meet the needs of specific applications and installations. Configurations are easily changed and range from peer-to-peer to full infrastructure networks, also allow roaming over a broad area.

3. Installation for Windows platform

The following section will assist you in installing wireless LAN Adapter successfully. You will first install software (Utility) and then insert / attach the Wireless LAN Adapter to your system, and finally set the network properties to accommodate resource sharing and select the type of wireless network that you wish to install. The Wireless LAN card can easily be installed and used, without bothering to connect cables for keeping your computer to use network resources.

3.1. Installation Overview

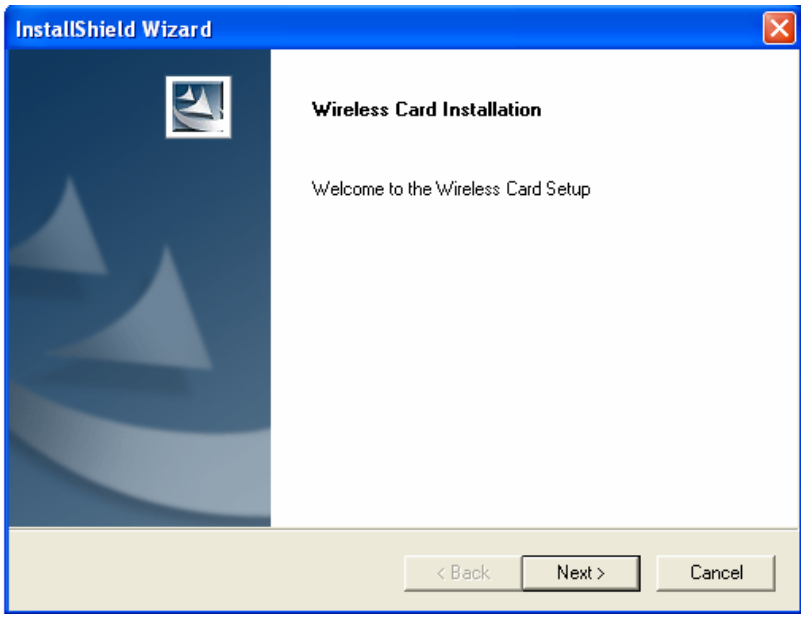
Here are some steps you will perform in establishing your wireless network connection:

- Install the Access Point at first. AP is needed in case of Infrastructure network mode.
- Install the software using the Install CD.
- Install the Wireless LAN Card.
- Install the network protocol(s) required to communicate on your network. Most likely you will need the TCP/IP protocol.

3.2. Install Procedure for Windows

> **Note:** Do not insert the **WLAN Adapter** until you are asked to do so, failure of which may result in unsuccessful installation of your WLAN device.

1. Insert the given Installation CD in the CD-ROM, then browse the CD content and find a file which be named **Setup.exe**, double click it for beginning the installation.
   Follow the instruction to finish the installation.

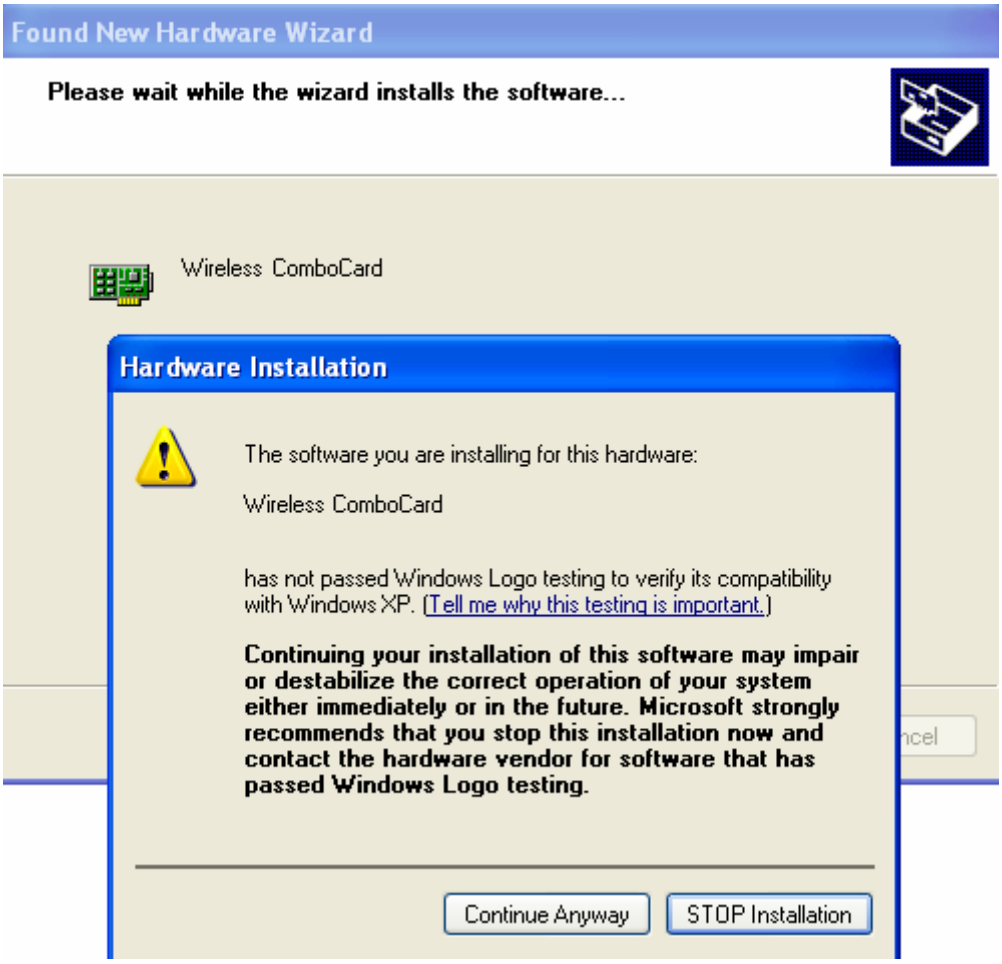


2. After complete the procedure, insert your WLAN card into PCMCIA/PCI slot or USB connector of your system, and then system will detect new hardware.

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install software for:
Wireless ComboCard
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

Select **"Install the software automatically (Recommended) "**, and then click **Next** to continue.

Once your system detected the driver, Microsoft will show a warning message as below.


Found New Hardware Wizard
Please wait while the wizard installs the software...
Wireless ComboCard
Hardware Installation
The software you are installing for this hardware:
Wireless ComboCard
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

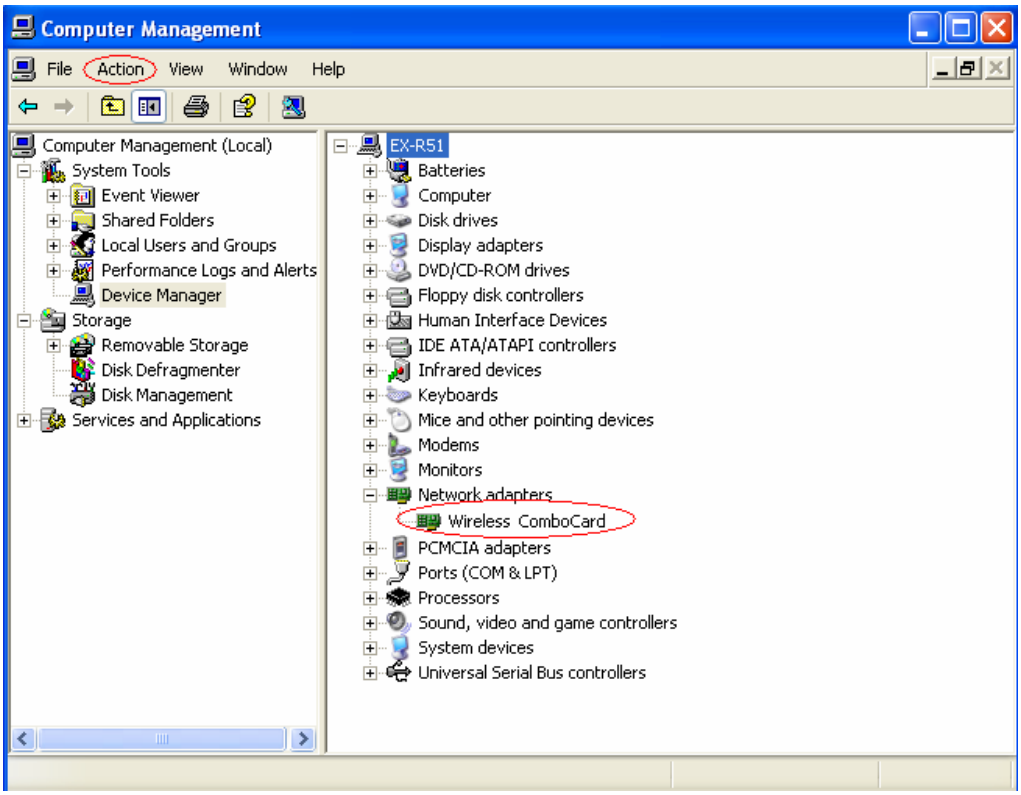
Click **“ Continue Anyway ”** for next step.

After copy the file to your system, then the setup is finish.

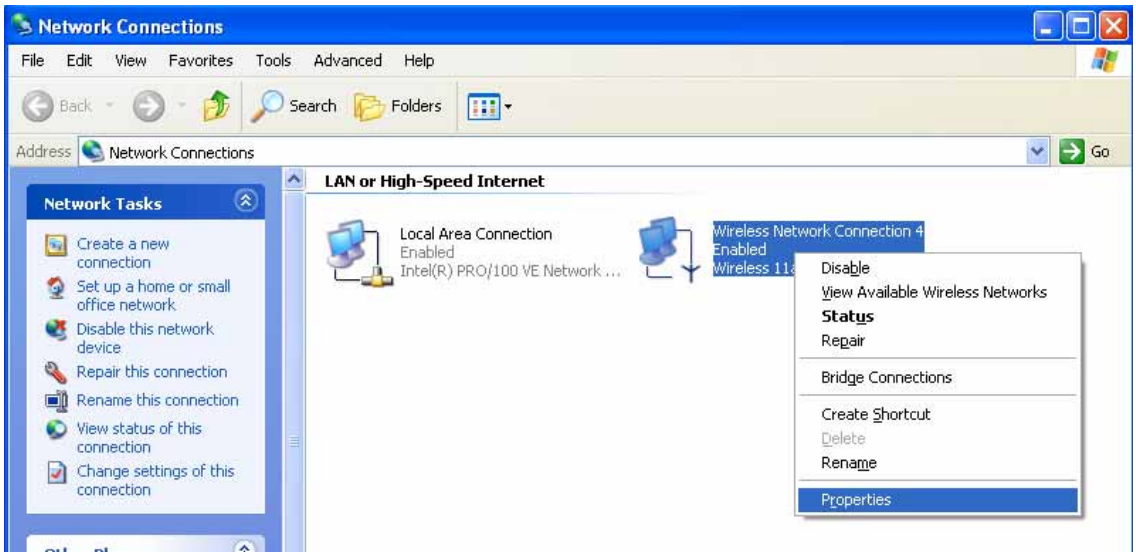
3. Insert your wireless network card into your computer.

Note: If the wireless network card is PCI interface, then you should shut down your computer first and power on your computer after you complete the card insertion.

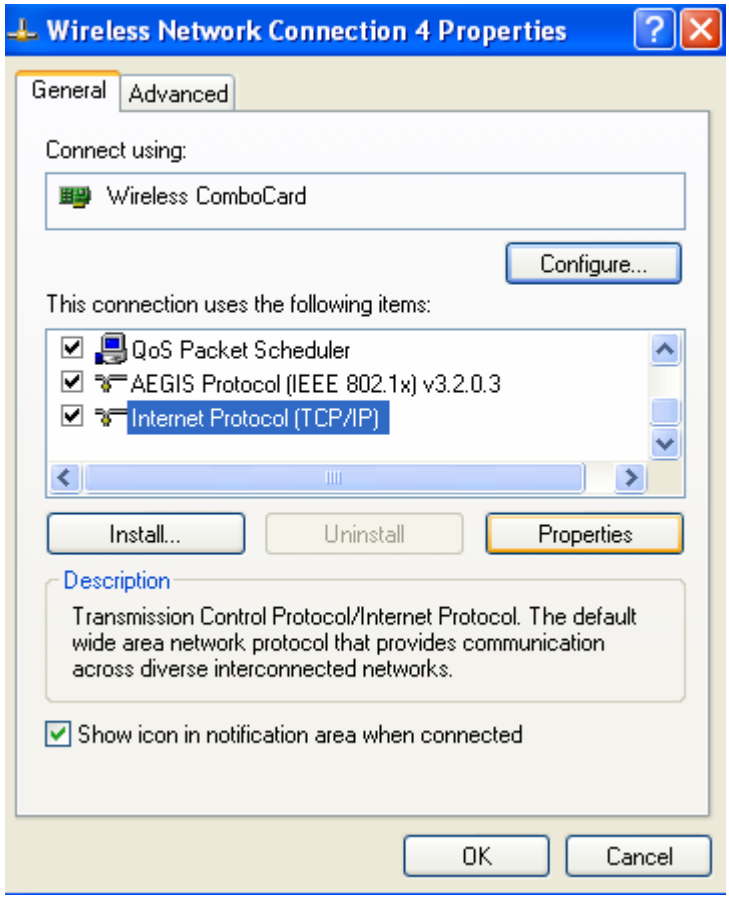
4. Click the right button of mouse on **My Computer → Manage → Device Manager**.
Check whether it has WLAN adapter in one of the sockets or not. If you find **Wireless ComboCard** in one of the sockets, it means the card is detected properly.
If you cannot find this card on device manager, please click the **Action → Scan for hardware changes** for research again. If this card is shown with yellow exclamation mark, please remove it and click the **Action → Scan for hardware changes** for research this hardware again for proper hardware installation.



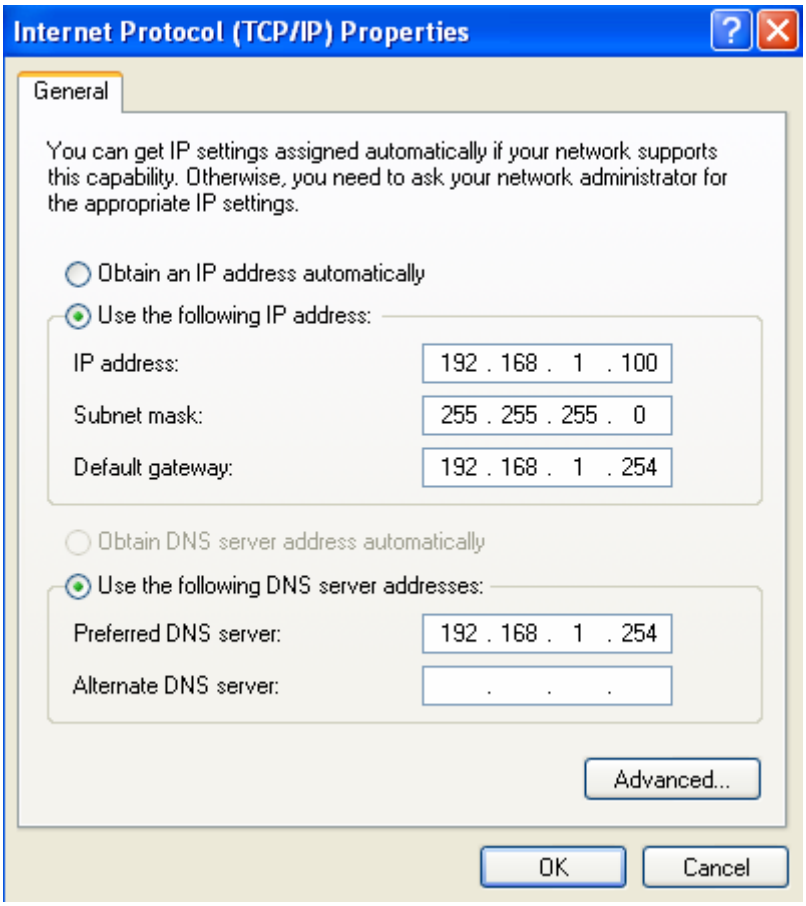
5. Click **Start→ Settings→ Network Connections** or right click mouse on the **My Network Places (Network Neighborhood)** for TCP/IP setting.



6. Click **Properties** from the pop up menu. Select the **Internet Protocol(TCP/IP)** and click Properties button.



7. You can select either **Obtain an IP address automatically** or **Use the following IP address** setting. If your choice is the second one then entering the **IP address, Subnet mask, Default-gateway and DNS**. After setting these parameters appropriately, click OK to return to back menu.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 1 . 100
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 1 . 254
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server: 192 . 168 . 1 . 254
Alternate DNS server:
Advanced...
OK
Cancel

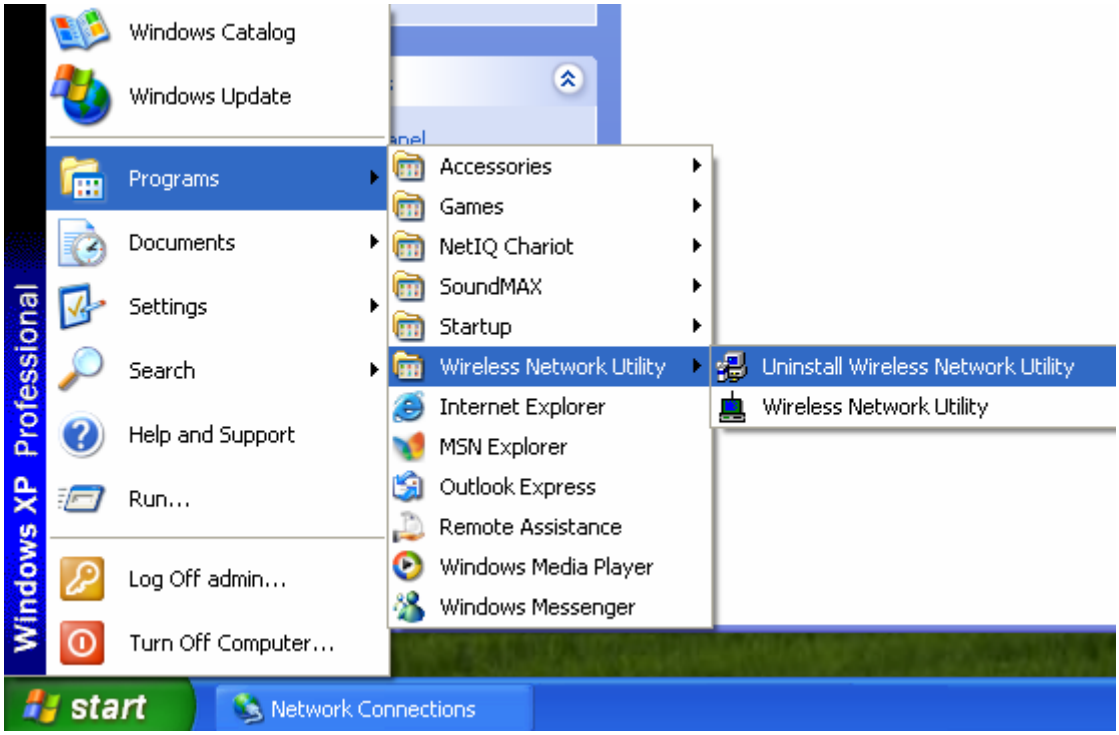
3.3 Uninstall Procedure

Step 1:

If you want to uninstall the WLAN adapter, just simply click

Start → Program → Wireless Network Utility→ Uninstall

It shall uninstall all related programs.



Step 2:

Restart your Computer.

4. Configuration Utility

Wireless network adapter uses its own management software. All functions controlled by user are provided by this application. Usually this application starts automatically,

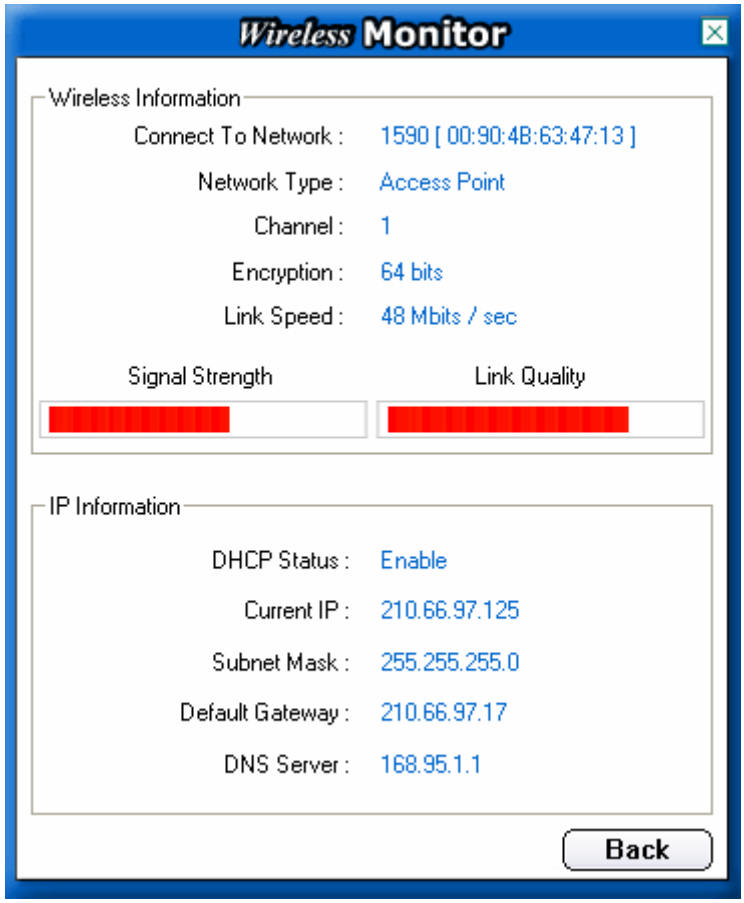
or click icon from Start Menu to start the Utility application.

A new icon - should appear in your Icon tray if your WLAN adapter is working properly. If the icon is in red color, it means that WLAN adapter is under poor signal or the connection is unavailable.

User can navigate through “sheets”, by clicking tabs. “X” button will minimize window.
To provide more information, click “More…” button. Below description explains the usage of this utility.

4.1 Link Information

Connected To Network



-

-

This field is used to display the current status of connection. The state shows “Connected to Network“ means normal flow of operation in Infrastructure mode. The PC is connected to access point. Networking is available.

A state of “Scanning” means that the node is searching for available Access Point within effective range. This field will also display an error message for some reason if the driver fails to initial.

- **Network Type**

  Infrastructure Mode - The driver will scan all available channels continuously until it finds one or more Access Points that match its SSID. At that point it will try and authenticate and associate with the Access Point.

  Peer to Peer Mode - The driver will scan for 5 seconds looking for an existing Ad Hoc network using the same SSID.

- **Channel**

  The current channel that be used for this WLAN adapter will be shown in this field.

- **Encryption**

  All encryption status will be shown in this field.

- **Link Speed**

  The current transmit rate will be shown in this field.

- **Signal Strength**

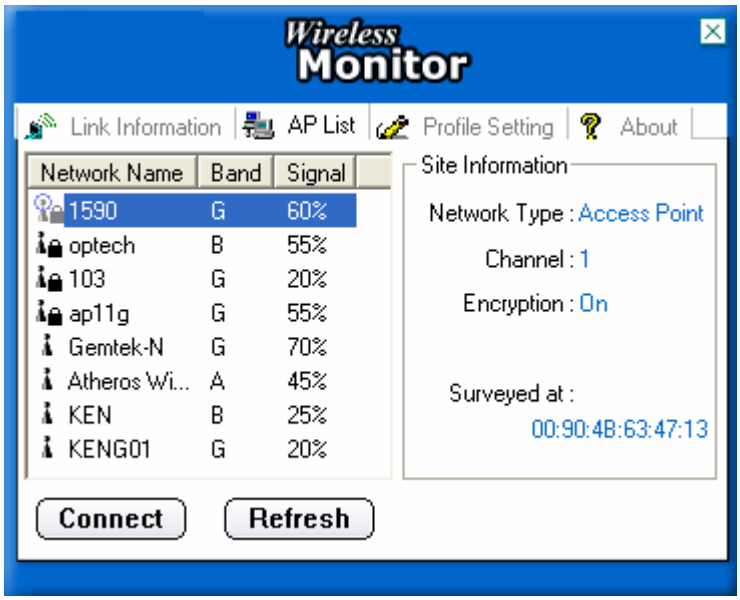
  The signal strength bar graph is only active when the node is in infrastructure mode. The bar graph displays normalized signal strength as reported by the radio, averaged over all frames over 100 bytes long that are received from the AP.

- **Link Quality**

  The Link Quality bar graph is only active when the node is in Infrastructure Mode. The bar graph displays the quality of the link between the node and Access Point.

4.2 AP List

The Connections Tab shows current status of available APs within the network.



User may select profile or ESSID from above list, click **"Connect"** to connect with the AP.

Click **"Refresh"** to rescan the network, this utility with site survey function, it will detect and list all available AP's within network.

4.3 Profile Setting

Profile Setting allows user to create profiles for different network environments.

Click **"Add"** button to create new profiles.

"Edit" for editing current exist profile.

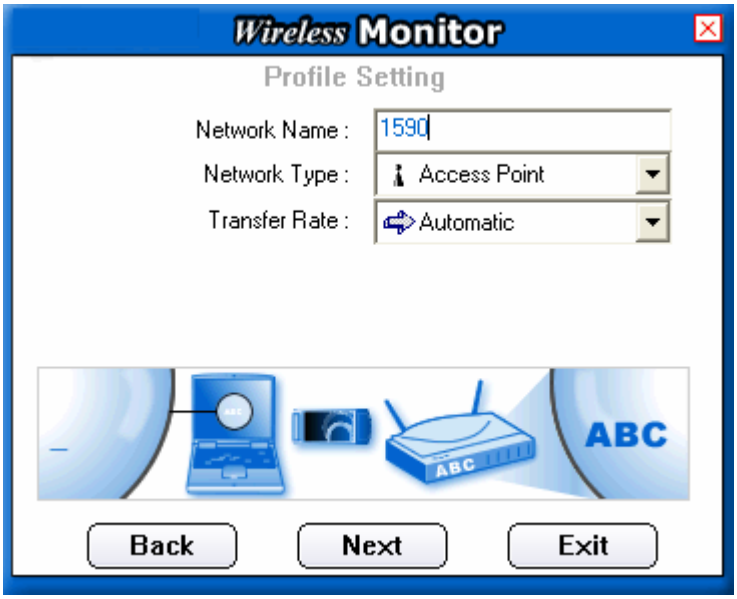
Click **"Delete"** button if you wish to delete profiles.

- **Network Name**

  The name of Profile, users can define it by themselves.

- **Network Type**

  This field allows you to select from a list of supported Network "Modes". The modes displayed will have two values: "Peer to Peer" and "Access Point".

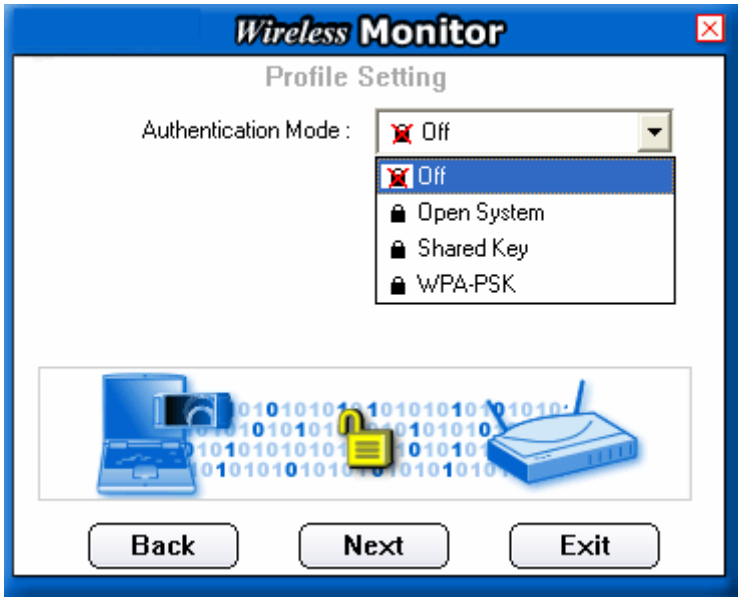


Peer to Peer - This is 802.11 peer-to-peer mode. In 802.11 Ad Hoc, only one wireless "cell" is supported for each different SSID. All communication is done from Client to Client without the use of an Access Point. 802.11 Ad Hoc networking uses the same SSID for establishing the wireless connection.

Access Point - This mode of operation requires the presence of an 802.11 Access Point. All communication is done via the Access Point, which relays packets to other wireless Clients in the BSS as well as to nodes on a wired network such as Ethernet.

- **Transmit Rate -** The transmission rate at which client of AP transmits the data packets. You may set this to fixed 1Mbps, fixed 2 Mbps, fixed 5.5 Mbps or higher or Automatic for 802.11 AP.

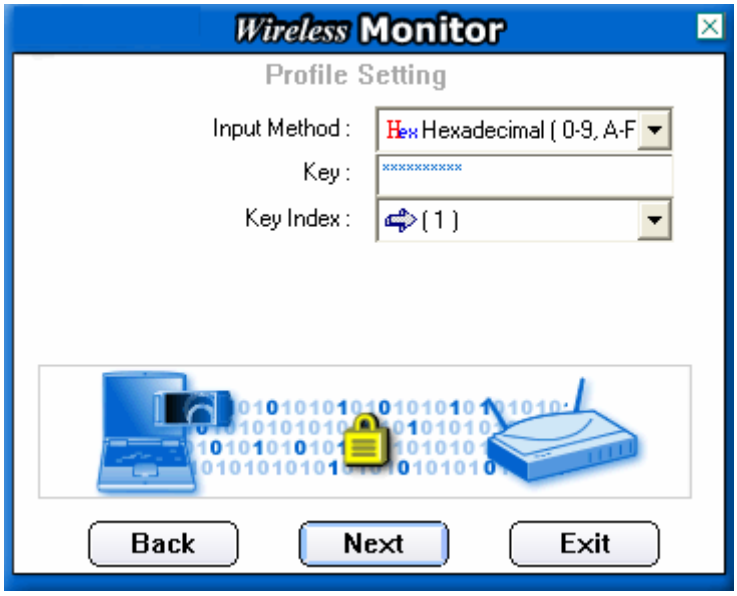
- **Authentication Mode -** You may desire an additional measure of security on your WLAN which can be achieved by using WEP or WPA encryption.



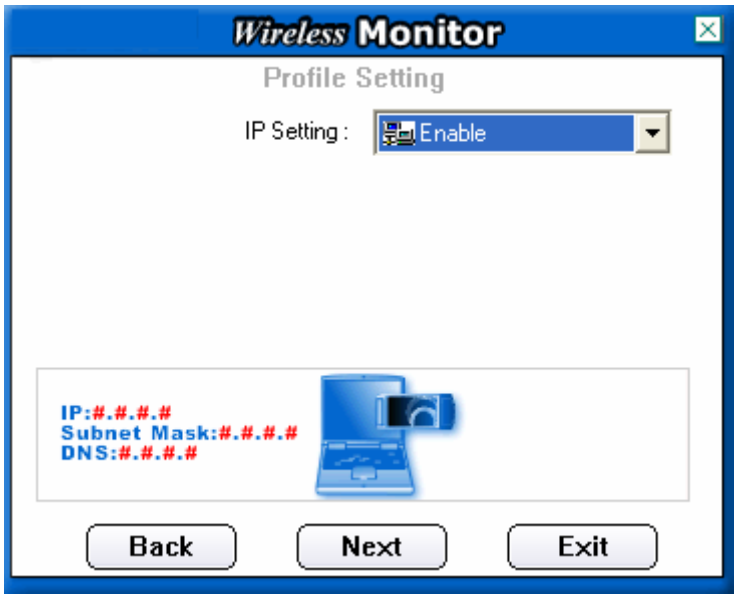
This panel allows to entry for 64/128-bit encryption according to WEP function select. To be written to the driver and registry, such as Hexadecimal format, each key must consist of hex digits, which means that only digit 0-9 and letters A-F are valid entries. If entered format is incorrect, the utility will not accept it.

WPA pre-shared key is one advanced security for wireless network. There are 2 types algorithm could be supported – one is TKIP, and the other is AES.

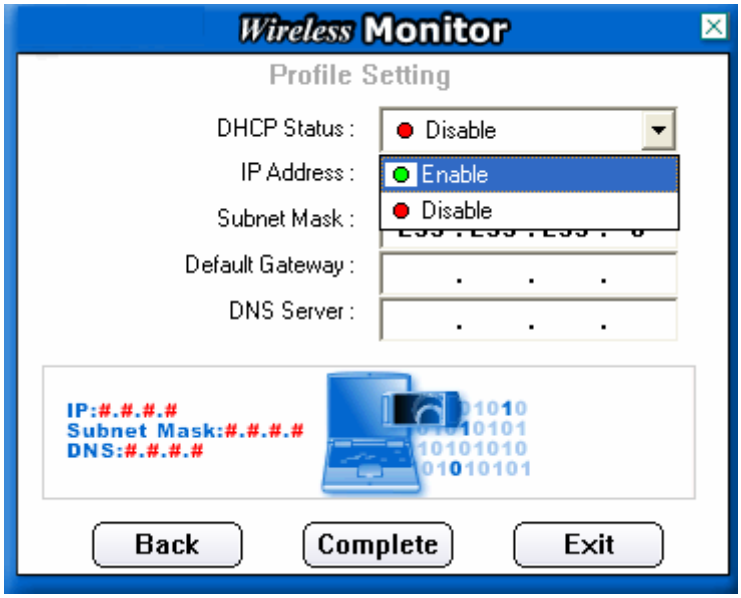
To use WPA Pre-Shared Key, enter a password in the WPA Shared Key field between 8 and 63 characters long.



To enable IP Setting function, please select enable.

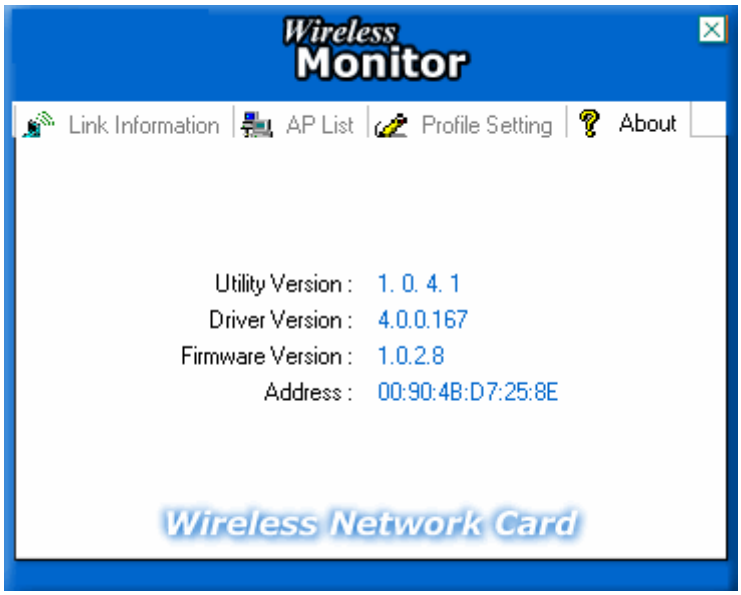


Please define if the current Profile IP setting will be assign by a DHCP Server or just assign by a fixed IP that is determinate by the Network Administrator.



When the DHCP Status is Enable, the TCP/IP information will be assigned by a DHCP Server. Or otherwise please fill up with the correspondence data of the IP settings.

4.4 About



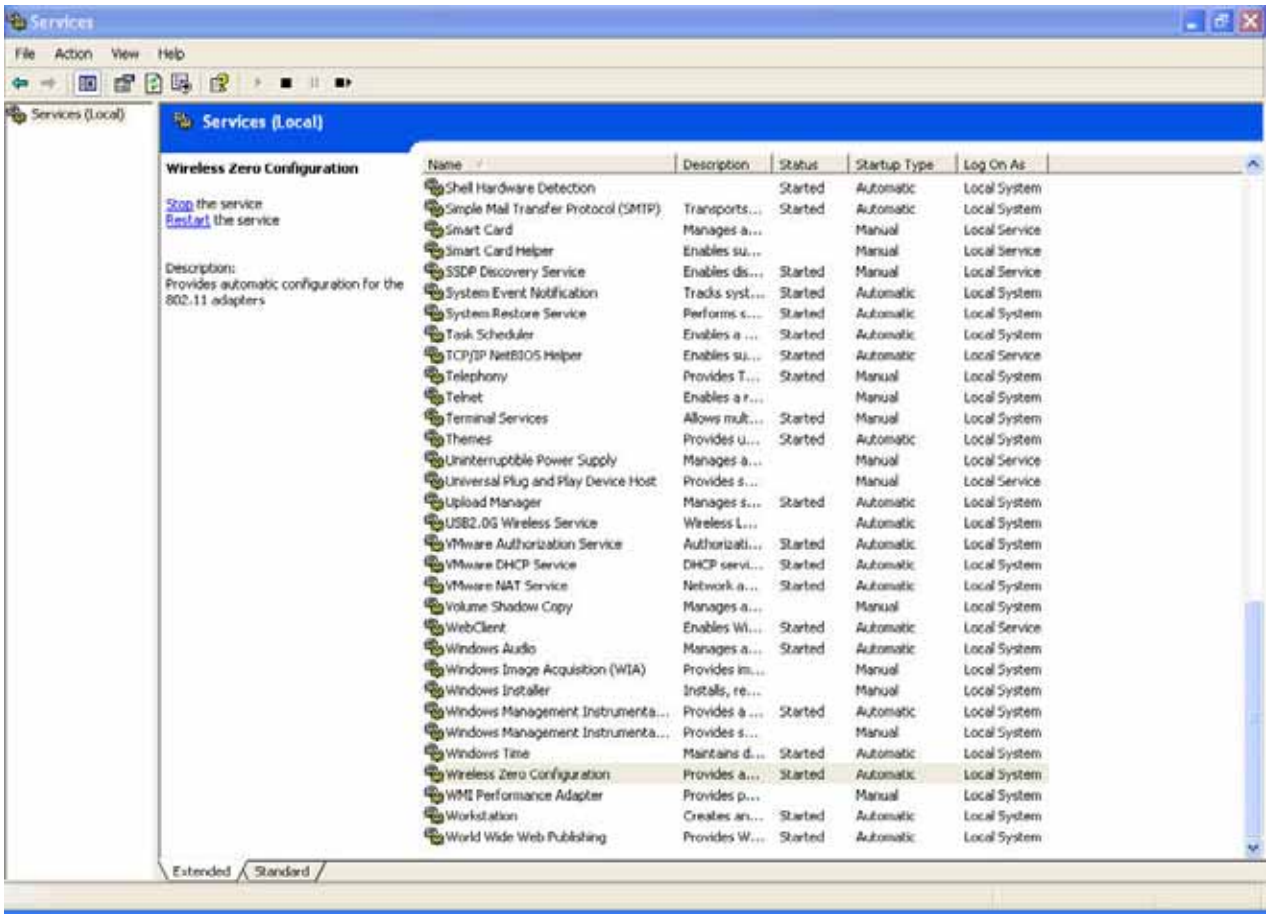
“About” tab shows the product version including the detail of Driver, Application and firmware versions. Users must use this version number when reporting their problems to technical support.

5. Appendix

5.1 Using WinXP Wireless Zero configuration for WPA setup

Step1:

Check and make sure that the Wireless Zero Configuration service is running.
Click **Start → Settings → Control Panel → Administrative Tools → Services**



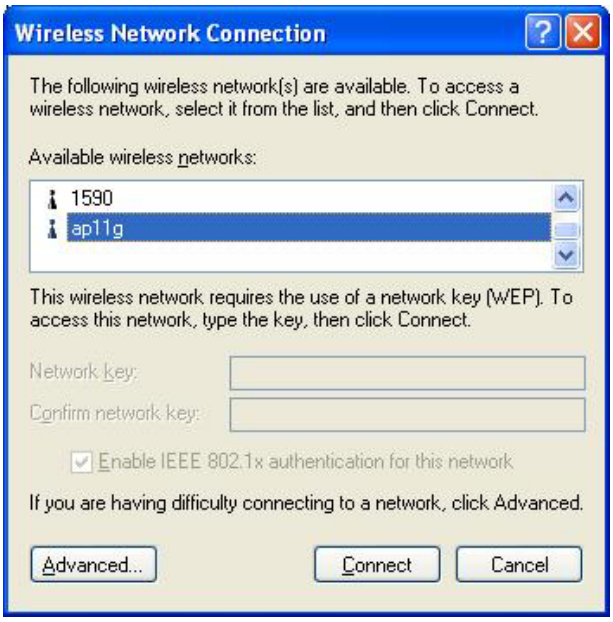
Since WPA security standard has been defined after Windows XP lunch date, then you should also update your current Wireless Zero Configuration utility version to the latest. In order to do so, you must run the patch file which be included the CD or please visit the following website for download it.

http://www.microsoft.com/downloads/details.aspx?displaylang=en&familyid=009D8425-CE2B-47A4-ABEC-274845DC9E91

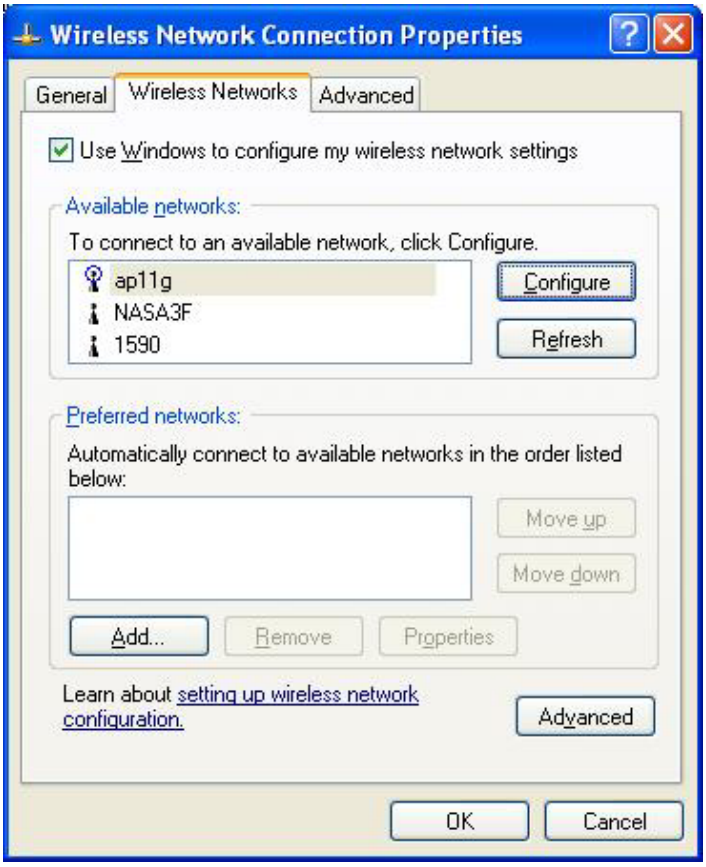
Once the above steps are complete, please proceed to the following page.

Step2:

Open the Wireless utility


Wireless Network Connection
The following wireless network(s) are available. To access a wireless network, select it from the list, and then click Connect.
Available wireless networks:
1590
ap11g
This wireless network requires the use of a network key (WEP). To access this network, type the key, then click Connect.
Network key:
Confirm network key:
Enable IEEE 802.1x authentication for this network
If you are having difficulty connecting to a network, click Advanced.
Advanced...
Connect
Cancel

Click Advanced and the following screen will appear. Over the Wireless Networks tab, click Configure.

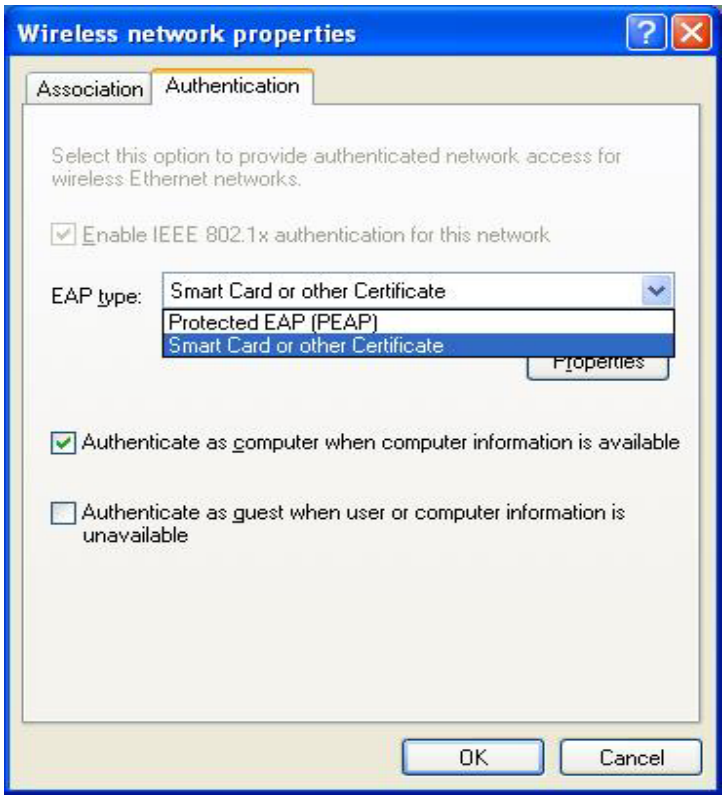


Step3:

Verify that the Network Authentication is WPA and the Data encryption is TKIP or AES. (The encryption type should match the WPA setting of your Access Point.)

Step4:

Click Authentication tab to select EAP type. (The EAP type should match the authentication server before access the authenticated network.)


Wireless network properties
Association
Authentication
Select this option to provide authenticated network access for wireless Ethernet networks.
Enable IEEE 802.1x authentication for this network
EAP type:
Smart Card or other Certificate
Protected EAP (PEAP)
Smart Card or other Certificate
Properties
Authenticate as computer when computer information is available
Authenticate as guest when user or computer information is unavailable
OK
Cancel

After clicking OK, the Wireless workstation will be able to associate with the AP previously get authentication by an authentication Server.